



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,598	07/26/2001	Bun Mizuhara	NEC01P108-HSc	7194
466	7590	03/07/2005	EXAMINER	
YOUNG & THOMPSON 745 SOUTH 23RD STREET 2ND FLOOR ARLINGTON, VA 22202			HAILE, FEBEN	
			ART UNIT	PAPER NUMBER
			2663	

DATE MAILED: 03/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/912,598

Applicant(s)

MIZUHARA ET AL.

Examiner

Feben M Haile

Art Unit

2663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ 07/26/2001 & 02/17/2004
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 2 & 8 recite the limitation "said output queue number". There is insufficient antecedent basis for this limitation in the claim.
2. Claims 2-3 & 8-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 2 & 8, it is unclear what is meant by the limitation "a value of said output queue number is designated".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 & 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chinnaswamy et al. (US 6,611,526), hereinafter referred to as Chinnaswamy, in view of Balakrishnan et al. (US 2004/0090974), hereinafter referred to as Balakrishnan.

Regarding claims 1 & 7, Chinnaswamy discloses a router device comprising: packet control means for adding said header information to said packet (column 7 lines 17-18; a slot processor adds a tag to the front of a packet for routing the packet within the backplane mesh of the switch), said header information including at least an in-device priority mode for representing priority in said device (column 7 lines 18-19 and column 9 line 1; the added tag has a priority field indicating packet priority), an in-device discard level for representing a probability of discard in said device (column 7 lines 18-19 and column 8 lines 64-65; the added tag has a keep field for indicating whether a packet is to be dropped), and a queue number (column 7 lines 23-25; the added tag has a destination mask field indicating a queue the packet is destined for), wherein said header information is used to perform priority control (column 8 lines 54-55; the different header fields indicate how to route the packets through the network).

Although Chinnaswamy discloses a queue number in the header (column 7 lines 23-25; the added tag has a destination mask field indicating a queue the packet is destined for), Chinnaswamy fails to teach that the queue number is used for performing bandwidth control.

However, Balakrishnan discloses a bandwidth allocator module that calculates a guaranteed rate for each queue in the system, where the guaranteed rate controls the bandwidth available to each of those queues (figure 2 unit 106 and page 4 paragraphs 0046-0047).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Chinnaswamy to incorporate the element taught by

Art Unit: 2663

Balakrishnan. The motivation being: a system for allocating bandwidth to maintain quality of service guarantees.

4. Claims 4 & 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chinnaswamy et al. (US 6,611,526), hereinafter referred to as Chinnaswamy, in view of Yazaki et al. (US 2004/0228274), hereinafter referred to as Yazaki.

Regarding claims 4 & 10, Chinnaswamy discloses the limitations of base claims 1 & 7.

Chinnaswamy fails to teach the limitations: flow identifying means for detecting a flow which is a set of packets having a certain property from packets input to said device; flow rate monitoring means for detecting whether a previously determined bandwidth under control is violated for each said flow; and forwarding searching means for determining, from contents of said packet, output line information indicating from which line said packet is to be output, wherein said packet control means creates and adds said header information based on flow information detected by said flow identifying means, information detected by said flow rate monitoring means, and output line information determined by said forwarding searching means.

However, Yazaki discloses a bandwidth monitoring device including a flow detection unit within a bandwidth monitoring unit for detecting flow based on stored packet header information (figure 5 unit 540 and page 5 paragraph 0073), a DSCP decision processing unit that determines a violation based on bandwidth check result information (figure 5 unit 530 and page 6 paragraph 0080), a routing processing unit that determines an output line for the packet (figure 1 unit 142 and page 4 paragraph

0052), and a packet receiving unit that writes the information from the bandwidth monitoring unit; which includes the flow detection unit & DSCP decision processing unit; and the routing processing unit into the packet (figure 1 unit 160 and page 4 paragraph 0053).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Chinnaswamy to incorporate the elements taught by Yazaki. The motivation being: a system that monitors bandwidth allowing for the effective use of a bandwidth contract.

5. Claims 5 & 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chinnaswamy et al. (US 6,611,526), hereinafter referred to as Chinnaswamy, in view of Yazaki et al. (US 2004/0228274), hereinafter referred to as Yazaki, in view of Heinanen et al., hereinafter referred to as Heinanen.

Regarding claims 5 & 11, Chinnaswamy as modified by Yazaki discloses the limitations of base claims 4 & 10.

Chinnaswamy as modified by Yazaki fail to teach the router device wherein said flow rate monitoring means detects whether actual traffic matches, temporarily violates, or completely violates the previously determined bandwidth under contract for each said flow.

However, Heinanen discloses a Two Rate Three Color Marker that tags a packet depending on peak rate, where if a packet is marked red it is discarded because it exceeds the peak rate, if a packet is marked yellow it is forwarded at a best effort, and if

Art Unit: 2663

a packet is marked green it is forwarded at a low drop probability (page 3 section 5; it is implicit that the flow rate of a packet can also be known as bandwidth).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to amend Chinnaswamy as modified by Yazaki to incorporate the Two Rate Three Color Marker taught by Heinanen. The motivation being: a technique of controlling the amount of transmitted data, thus creating a more reliable system.

6. Claims 6 & 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chinnaswamy et al. (US 6,611,526), hereinafter referred to as Chinnaswamy, in view of Kojima (US 6,741,570).

Regarding claims 6 & 12, Chinnaswamy discloses the limitations of base claims 1 & 7.

Chinnaswamy fails to teach the limitations: an input side in-device cell buffer for temporarily storing said in-device cell; an output side in-device cell buffer provided corresponding to an output line for temporarily storing said in-device cell; and switching means for switching said in-device cell stored in said input side in-device cell buffer to said output side in-device cell buffer, wherein said input side in-device cell buffer, said output side in-device cell buffer, and said switching means are controlled on the basis of said header information.

However, Kojima discloses a switching system including an incoming cell buffer module where an incoming cell is stored, a cell switch module that transfers the stored incoming cell from the incoming cell buffer module to an outgoing buffer module and an

Art Unit: 2663

outgoing cell buffer module that stores the cell it needs to be forwarded to an outgoing line (figure 1 units 5-7 and column 3 lines 50-55). Kojima further teaches that the connection between the switch module and the outgoing cell buffer module depends on the routing information included in the header of the cell (column 3 lines 37-41; although Kojima only discloses header information being used by the switch module and outgoing cell buffer, it is implicit that the header information is used for data flow through each of the different elements in the system).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Chinnaswamy to incorporate the elements taught by Kojima. The motivation being: a system that monitors how much buffer space is being used so as to allow for maintenance and/or adjustments of the buffer space.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

a) Hanaoka (US 5583858), Asynchronous Transfer Mode Switching Device

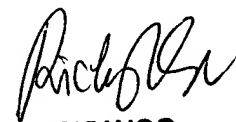
b) Chen et al. (US 20050008009), Single and Double Tagging Schemes for Packet Processing in a Network Device

Art Unit: 2663

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Feben M Haile whose telephone number is (571) 272-3072. The examiner can normally be reached on 6:00am - 3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



RICKY NGO
PRIMARY EXAMINER

3/3/05